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CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH

TECHNICAL ADVISORY COMMITTEE

Fifth Meeting, Rome, 30 January -2 February 1973

REPORT TO THE TECHNICAL ADVISORY COMMITTEE OF THE SUB-COMMITTEE APPOINTED TO REVIEW AGRICULTURAL RESEARCH IN TROPICAL AMERICA

(Summary of conclusions and recommendations)

(Item 7)
8

TAC SECRETARIAT

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

ROME 1972

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December 1972

Agenda Item 7.

REPORT OF THE SUB-COMMITTEE APPOINTED BY TAC TO REVIEW AGRICULTURAL RESEARCH IN TROPICAL AMERICA

Summary of conclusions and recommendations

Introduction

In accordance with the decision taken at the Third Meeting of TAC, the Sub-Committee to Review Agricultural Research in Tropical America, consisting of Dr. L. Marcano (Chairman), Prof. Dr. D. Bommer, Dr. J. Muriithi and Mr. B.N. Webster (Secretary), visited Latin America between 18 November and 11 December 1972. The countries visited were Brazil, Colombia, Venezuela and Costa Rica, and discussions were held with several individuals either in charge of regional programmes or with a wide knowledge of research in the region. The Terms of Reference of this Mission are attached hereto as Annex I; the Itinerary and list of persons with whom discussions were held, and the Bibliography, will be attached to the full report.

In order to define the agro-ecological limits of the zone to be taken into consideration, the Sub-Committee reviewed the classifications of Troll and Papadakis, and a series of provisional climatic classification maps prepared for crop zoning in tropical America for the IICA station at Turrialba by Holdridge and others. The Sub-Committee came to the conclusion that for the purpose required (an overview of existing research activities and the definition of research needs in Tropical America), the study of detailed materials was inappropriate. It was therefore decided to follow the descriptions of Roberts and Hardin, and to define the tropical zone of America as that area of land lying between the 23rd N&S parallels, at elevations from sea level to approximately 1,000 M. Above this elevation, altitude affects temperatures to the point of creating temperate conditions. Within the zone, temperature is closely related to altitude, but in general is uniformly high and photoperiod is reasonably constant, by and large a high level of solar energy ensures maximum photosynthetic activity.

The Sub-Committee further concluded that although studies of particular agro-ecological zones might be required in connection with the more detailed formulation of cooperative programmes which it proposes, adequate general information already existed to serve as a guide, and detailed work on zonification was under way in several centres such as Campinas and Turrialba inter alia.

General Status of Research

All the countries of the zone are conducting research programmes at the national level, although the intensity of the effort varies according to the economic situation of the individual country. There is a nucleus of well trained, highly experienced personnel in all the countries visited, although the level of training varied from country to country - e.g. in Brazil, only 10% of the research cadre had received post-graduate training, whereas in Colombia about 30% are so trained. There is therefore a clear and constantly expressed need for additional post-graduate training facilities and fellowships.

Although in the countries visited there has been a history of lack of orientation in the research effort with consequent dissipation of resources, sometimes on low priority objectives, there is a growing awareness of the need to establish clear priorities. New programmes reflected the very high priority being accorded research on food crops, including protein foods such as livestock and grain legumes, and concomitant programmes of research in soils and pastures. Nevertheless, the real need to ensure increases in foreign exchange earnings through industrialization and export, was reflected by equally high or in some cases higher priority being accorded to industrial food and non-food crops.

It became clear to the Sub-committee that the current state of knowledge is well in advance of the application of that knowledge to practical farming situations and that a very strong effort is required to overcome socio-economic and political constraints in order to solve the problems of application.

In accordance with the Terms of Reference, specific attention has been given to the regional need to improve protein food supplies from grain legumes and beef cattle, and to the programmes of international and regional centres. Preliminary conclusions and recommendations follow below. A general comment on N.E. Brazil is also included, in accordance with the request made at the Fourth TAC meeting.

Beans

Beans (Phaseolus vulgaris) are the basic foodstuff for a large part of the rural population of Latin America, for whom they represent not only the chief source of protein, but also one of the least expensive. However, yields are extremely low.

The enormous variability in genetic material worldwide has been insufficiently explored and exploited, but obviously suggests an extremely promising potential.

Everywhere visited, it was evident that the bean is of major importance in the daily diet and its value as a source of protein was emphasized. Frequent mention was also made of the low yields of this crop and the need to strengthen both national and regional research.

The most important programme in Brazil on this crop is being carried out at the State University of Minas Gerais (Viçosa) where Clibas Vieira, Coordinator of the National Bean Programme works. In Colombia, the leading national bean programme is at Palmira. In Venezuela, national activities in beans are coordinated from the Maracay Agricultural Research Centre. In Central America, the main research activities are being conducted at the Turrialba Centre (CTEI) where work on breeding, soil fertility, soil physics, and physiology is going on.

A cooperative regional programme already exists in Central America, promoted by IICA. The Sub-committee was fully informed of the activities of this programme by Heleodoro Miranda, the programme leader. This programme, which serves all experimental stations in Central America interested in research work on this crop, coordinates all efforts, stimulates activities and has been the basis for important production increases in El Salvador. Ing. Miranda, who has an operative budget of only U.S. $20,000, mentioned that the effect of the programme in other countries has been limited due to the scarcity of resources for the programme, and a lack of support at political levels, from the participating countries. The cooperative bean programme started in 1965 has made excellent progress on the determination of the problems limiting bean production in the Central American countries. Crop zoning for the same area has also been carried out.

On the visit to CIAT, Palmira, the Sub-committee was informed of the research activities in beans being planned. Dr. R. Hernández Bravo has recently joined the staff as bean breeder, and note was also made of the fact that Dr. Guillermo Galves dedicates a major portion of his time to the study of diseases limiting bean production. Information was also presented on the preliminary results obtained at the Carimagua Station where planted beans were fertilized, and general information was also obtained on the evaluation of the collection of bean varieties being gathered at Palmira.

The Sub-committee was also informed that CIAT is preparing to hold a seminar between 26 February and 1 March 1973 to:

Consider:

a. The state of food legume production and research in Latin America.
b. The roles of various agencies in improving the production, marketing and acceptance of food legumes in Latin America, and how best to coordinate research, development and training activities.

Identify:

a) Priorities in research, training, production and distribution activities.
b) Specific opportunities for international agencies to participate in the efforts of national and regional programmes.
c) Financing and support of specific projects.

Mobilize and Stimulate:

A network of institutions and individuals in Latin America for cooperative efforts and exchange of materials.

In accordance with the cited literature, there are also research programmes in beans at the Tulio Ospina Experimental Station (ICA-Colombia), the Bajio Agricultural Research Centre (CIAB-Mexico), at the National Training, Research and Extension Centre in Chapingo (Mexico), and at the La Molina Agricultural Experiment Station (Perú).

The problems found limiting production in several places were the following:

a. the need for new varieties with greater production capacity,
b. the need for new, or the identification of existing varieties resistant to diseases,
c. adequate zoning for the crop,
d. quality improvement of protein content,
e. socio-economic problems experienced by the small farmer which limit the adoption of improved agronomic practices.

On the basis of all the information obtained, it is evident that there is adequate groundwork for organizing a regional cooperative programme with the participation of the national, regional and international experiment stations with the objective of achieving greater efficiency from the work being presently conducted by these institutions.

The operative model of the Central American Programme and the results of the seminar being planned by CIAT for next year, should provide sufficient basis for implementing this idea.

In view of the above, the Sub-committee recommends that TAC appoint a working group of 2 or 3 persons to spend an adequate period (3 to 4 weeks) preparing a definitive project for a programme as outlined above. At least one member of this group should attend the CIAT seminar early in 1973 to obtain first hand information on the reaction of the participants, and to utilize this information for the preparation of the proposed programme. If this recommendation is accepted by TAC, the Sub-committee will prepare more precise terms of reference for the working group.

Livestock and Pastures

Beef Cattle Production

All countries of Central and South America regard beef as a high priority item for research and development. This popularity is based on the following reasoning:-

a) A need to increase protein for consumption by their increasing human population.

b) Existence of large areas of territory capable of raising beef on grass under suitable and economic management practises.

c) Possibilities of raising beef cattle under intensive system in high rainfall low lying areas, using by-products of sugar, bananas, cereal grains, etc.

d) Opportunities of earning foreign exchange from any beef surplus to the requirements of the region.

Dairy Cattle Production

Dairy cattle are important in the lower high rainfall areas. Although their importance is not as pronounced as in beef cattle, there is need to coordinate and stimulate various efforts in management, breeding and feeding currently being done. Besides providing protein from milk, dry cattle also produce some milk.

Forage Production and Feeding

The provision of foodstuffs adequate in quantity and quality was expressed as the main constraint in restricting beef production in the area. First priority is given to this problem in programmes of national and international institutes dealing with beef production. Vast areas of savannah type vegetation will be, for years to come, used exclusively for this kind of agriculture and extensive developments in the tropical rain forest areas call for the protection of a permanent grass cover which will be best put to use by beef cattle. In most of the research stations visited, research had been or was being conducted on similar or identical problems. These include, besides others, to bridge the lack of available forage during the dry season, to improve forage yield and quality, to introduce and multiply adapted grass and legume species and varieties, to correct mineral deficiencies in the soil and food, to avoid phytotoxicosis and to supplement pastures by means of using available by-products such as molasses and bananas.

This research differs in the level of conducting and applicability, and lacks coordination to a great extent. IICA operates an effective cooperation programme in the Andean region and started another one in 1971 for the Central American countries. The reorganization of agricultural research in Brazil lists the coordination of research in forage production with high priority and CIAT has developed possible valuable contacts with many research stations in the various countries involved.

The strengthening of the cooperation effort in the areas as a whole by one international programme seems to be highly necessary to overcome the still existing weaknesses in various parts of the region. It would avoid unnecessary duplication and repetition of experiments and will achieve the application of already existing knowledge to practice.

Some Major Limitations to Beef Cattle Raising

The following are some of the main problems -- in their order of priority -- limiting increased production from beef cattle raising:-

1. There is a need to provide adequate feed and forage during the dry season as well as generally improving the nutritive value of pastures throughout the year. This is desirable so that available cattle can produce and reproduce to their highest level, whereby the optimal production becomes limited largely by climate and the genetic make up of the cattle. This procedure would pave the way for breeding for more production as a second stage of research.

2. There is a need to work out a management system of soils and pastures that maintains soil fertility, avoids or minimizes heavy infection with intestinal parasites and reduces mineral deficiencies.

3. Disease - Throughout the region, there is no evidence of decimating animal diseases. There is, however, parasitism, mineral deficiency and low reproduction rates. The part played by these is not easy to obtain, but an attempt to provide diagnostic services in the main cattle raising areas would be valuable not only in deciding correct remedial measures, but also in identifying those other disease problems that could assume importance in the future. Such a diagnostic service could be used in the control of the other common infectious diseases such as brucellosis, foot and mouth disease, tick fever diseases, etc., whose cure or vaccine against such diseases are already known.

Recommendations

The Sub-Committee recommends that TAC nominate up to three (3) experts with knowledge of South America:-

(i) To organize a seminar of interested people who would address themselves on how best to coordinate and diffuse more widely the work being done on beef in various institutions. This work would include pastures and forage legumes as well as a recommendation on how best a diagnostic service could be provided and organized for the major food producing livestock.

(ii) The team should design a cooperative programme that would stimulate regional activities. This can best be achieved by involving IICA and CIAT, thereby ensuring that national research, extension and other agricultural services (in particular credit and marketing) are aware of the possible solutions and can influence their respective governments to adopt appropriate corrective measures. This could be achieved either through bilateral or international funding.

Cassava

In all Latin American countries, cassava is a daily item of the human diet. It is also used for feeding livestock and has great potential as an industrial crop. There are possibilities for its protein content being increased through using fermentation processes, utilizing temperature-tolerant bacteria.

Because of the wide usage of cassava with its great potential, it is important to increase research aimed at:

1. Producing varieties that respond favourably to fertilizers.
2. Producing cassava varieties that produce higher yields in soils of poor fertility.
3. Increasing the protein content of cassava.

4. Increasing the consumption of cassava in stock feeding and in such industrial uses as starch production and substitution (in calculated mixtures) of traditional flour for man.

As most cassava research programmes are still in process of organization and reorganization the Sub-committee does not recommend any specific action but emphasizes the need to recommend continued support for the cassava research and outreach programmes of CIAT.

The Turrialba Centre

1) The Sub-committee feels it is necessary to clarify the respective position of the Instituto Inter-americano de Ciencas Agrícolas (IICA) and its dependency the Centro Tropical de Enseñanza e Investigación, Turrialba (CTEI). IICA is the Institute of the Organization of American States (OAS) charged with specific responsibility for regional developments in the field of agriculture. Its total budget amounts to US $4,100 million annually.

In 1942 it initiated activities in Turrialba for the establishment of a post graduate training centre in tropical agriculture with supporting research facilities, and in 1944 the present station was established on 1,000 Ha. made available by the Government of Costa Rica. Its objectives were: to upgrade as quickly as possible the research and extension cadres of all member countries of Latin America through the provision of post graduate training in all the disciplines of agriculture; to undertake research into common problems of the region and to provide a research function in support of the teaching function; to provide technical assistance to national post graduate schools through advice and the provision of fellowships, and to give guidance to national research organizations both on the institutional arrangements for, and the conduct of, national research programmes. To date over 400 post graduate degrees have been awarded.

In 1959 the whole resources of IICA were devoted to strengthening the Centre and an approach was made to the UNDP/SF for project assistance in an attempt to accelerate what had become recognized as a well balanced and worthwhile programme despite its very slow progress. The UNDP/SF/FAO project of assistance was initiated in 1963 with nineteen countries (ultimately) participating. It soon became apparent that a number of countries of the region wanted a little more than support to a regional undertaking and attempts to hive-off part of the assistance to national training and research efforts were constantly being made. The establishment of two zonal sub-centres, for livestock training in Uruguay (La Estanzuela) and Agricultural Engineering in Peru (La Molina) marked the beginning of the process of decentralisation insisted on by the member countries. Following the end of the UNDP/FAO project further decentralisation saw the former Economic and Social Department of CTEI (which at one time accounted for nearly 50% of the post graduate student body) moved to Colombia, where it now forms part of the IICA Centre for Rural Development and Agrarian Reform. The latest proposal in the decentralisation process has been to transfer the Library and Information Centre (still housed at Turrialba) to IICA headquarters as the Inter-American Agricultural Documentation and Information Centre. What remains of the former Turrialba Centre has become regarded, in the face of increasing assistance to agricultural education in the other zones of IICA and increasing national facilities for post graduate education, as the educational and research centre for the Northern Zone, comprising the states of Central America and the Caribbean. Nevertheless, the current student body has a relatively low percentage of its 92 members from the Northern Zone, clearly indicating some continued support, and felt needs, on the part of other states of the region. However, the greatly improved post graduate facilities in the member states suggests that these numbers cannot for long be maintained.

The Centre is therefore seeking new sources of financing and a new affiliation. It is proposed by the Board that a process of transfer of the Turrialba lands and installations to the Government of Costa Rica be initiated, and that this be completed over a five year period during which time the contribution of IICA to CTEI (see below) would be reduced to

less than 50% of its present level. The Government is now discussing with IICA the possibility of forming a new legal entity, with the Government and IICA as founder members, but with membership open to any other government or organization which may be prepared to give annual support not lower than US $50,000. This agreement is now accepted in principle and is awaiting signature. A separate agreement with the University of Costa Rica to establish responsibility for post graduate training and the award of post graduate degrees, currently awarded by IICA, has also been accepted in principle but subject to the provisions of the agreement with the Government.

2) Current Finances. The current budget of the Centre is US $955,318 annually, made up from the following contributions:

IICA	$ 695,068
US Atomic Energy Authority	105,000
Commercial operations of farm	59,000
Multinational Project of OAS	27,250
Netherlands Bilateral assistance	56,000
FAO-Timber laboratory	13,000
	$ 955,318 *

(* Compare to a former budget of between $1.5 and $1.7 million).

The future of these contributions is unclear. IICA proposes a reduction in its' annual contribution from $695,068 to $300,000 over five years (and even this reduced contribution could be lost if US support through OAS/IICA is diminished). The US Nuclear Energy Programme contribution is likely to depend on the station having a viable future and the same will probably apply to the other smaller bilateral contributions.

Current expenditure shows the swing from concentration on training to concentration on research, the latter accounting for 56% of expenditure.

3) Physical facilities. These are impressive and superbly maintained, clearly at very high cost. More than half the land at Turrialba is under pasture and a considerable portion of the balance under forest and plant collections. The soils are atypical of the humid tropics and not well suited for the legumes which form the main line of current crop research. Consequently much of the legume field work is carried out elsewhere in Costa Rica and in cooperative programmes (IICA) with other participating territories.

Housing, classrooms, laboratories, plant houses, library and office accommodation are more than adequate for the work being carried out, with the possible exception of livestock field laboratories and animal housing. These are insufficient considering that animal production (mainly nutrition studies) forms the second main line of research at present.

The station has two radiation sources and an IBM 1130 computer (now transferred to IICA headquarters) - all under-utilized. The computer has worked an average of 100 hours per month (200 is reckoned to be reasonable usage) and little serious irradiation work seems to be undertaken at present. Some useful work has been done on cassava pollen irradiation and on beans but the impression was gained that the plant breeders were using a "shot gun" approach to induced mutation on various materials which come their way.

4) Staffing. The standard of the professional staff was quite high but all are suffering from uncertainty regarding the future. They admit that the station is running at little if anything over 50% capacity and are putting high hopes on receiving international assistance, either for the Legumes/Livestock programmes or in some other role such as as a component in the proposed Genetic Resources Centres Network.

5) Conclusions and recommendations. The Sub-committee understood clearly the nature of the new proposals for the future of CTEI and believes that the transfer of post graduate functions to the University of Costa Rica should prove workable, having been well impressed by the visit made to the University. Regarding the research function of the Centre, which was now regarded as its main role, the Sub-committee was anxious to find a solution for the current under-utilization of the excellent facilities of a station which has a tradition and a high reputation for research in the region, and which has made a considerable impact, particularly in Central America. The current concentration of resources into three programmes, Crops and Soils (with especial emphasis on legume cooperative work in Central America), Animal Husbandry (with especial emphasis on tropical low-country dairying) and on Forestry (particularly forest entemology and the reforestation of impoverished soils), is commended. In addition, the Sub-committee was impressed by the germ plasm collections of cacao, coffee (one of the principal sources of rust resistant materials) and tropical fruits, and by the working collections of beans and cassava.

Believing that, by some means or another, the future of this station should be assured, but unable to recommend the specific support sought for the livestock and legume programmes for Central America, in the light of similar work being done elsewhere, the Sub-committee would propose the following roles for the Turrialba Centre:

i) As a major participant in any coordinated regional programme on food legumes which may be established, with specific reference to work in Central America.

ii) As a similar major participant in regional livestock work with specific responsibility for dairying and beef production problems of the low country humid tropics.

iii) By participation as a major regional centre in a global network of germ plasm conservation and resource centres with specific responsibility for cacao, tropical fruits, coffee (in association with Campinas), legume and cassava working collections (in association with CIAT and with zonal responsibilty for Central America), and eventually for tropical forestry germ plasm.

In addition the Sub-committee believes that the Turrialba Centre, with its excellent teaching facilities, could play a major role in the practical training of staff for any global genetic resources network which might be established.

iv) Turrialba should be borne in mind as a suitable site for the conduct of research on any tropical commodity for which centralised work may be proposed in the future. Amongst these the Sub-committee would draw particular attention to industrial crops such as cacao, palms and tropical fruits for commercial use. In addition, its use as a centre for tropical forestry research may be considered.

The exact role of CTEI in the proposed regional networks for legumes and livestock production should be investigated in depth by the proposed working groups.

CIAT. The TAC is well aware of the programme and budget of CIAT and the Sub-committee does not therefore propose to treat these in detail. The re-orientation of the CIAT programme in 1972 to two major thrusts, on beef and cassava, with subsidiary programmes on field beans, swine and farming systems is reflected in the current work at the centre. Relay work on rice and corn, in conjunction with IRRI and CIMMYT, is already making a considerable impact in the region.

Particular attention was given to the beef cattle and legume programmes and the Sub-committee reached the following conclusions:

Legumes: This programme has been expanded into a major regional effort. It has been designed ad initio to fit in closely with any other major effort on legumes and the initial impetus of the programmes has been maintained to the point of establishment of a regional workshop (following the earlier cassava model of CIAT)

in early 1973. The Sub-committee fully endorses the leadership assumed by CIAT in this field within the whole region. Nevertheless, believing that a certain minimal critical mass of research should be reached in such a regional programme, and not being in a position as yet to decide whether this point has been reached, the Sub-committee wished to point out the possible future need to strengthen the bean programme of CIAT if it is to play its full leadership role in any regional network which may be established.

Beef cattle: The Sub-committee were most impressed by the cattle programme, particularly the herd management trials on the llanos at Carimagua. Useful training programmes have already provided a nucleus of CIAT trained personnel in many countries of the region. The Sub-committee believes that a regional livestock research network could be established with the participation of these former trainees, inter alia, and is convinced that leadership of such a programme could and should be taken by CIAT.

Northeastern Brazil. The specific and serious problems of the semi-arid region of Northeastern Brazil, including the states of Alagoas, Pernambuco, Paraiba, Rio Grande del Norte, Ceará and Pisui, are ecological and socio-economic in nature, each of equal importance. With respect to the great efforts being made towards the development of this region by the Brazilian government, the reorganization of agricultural research in Brazil and of various international and bilaterally sponsored research activities such as the FAO/UNDP Livestock Project and the Ford Foundation Sorghum project, the Sub-committee recommends no specific action to TAC at this time. Outreach programmes of ICRISAT and IITA to Northeastern Brazil should be considered as soon as both institutes have developed the capacity to do so. Specific research needs of this area, which call for additional activities, should be discussed with the Brazilian government as soon as the research reorganization in Brazil has progressed to envisage serious research goals.

ANNEX I

TERMS OF REFERENCE FOR TAC SUB-COMMITTEE TO REVIEW

AGRICULTURAL RESEARCH IN TROPICAL (MIDDLE) AMERICA

1. The Committee will consist of:

Dr. L. Marcano	-	Chairman
Prof. Dr. D. Bommer		
Dr. I. Muriithi		
Mr. B. N. Webster	-	Secretary

Dr. D. Hopper and Ing. M. Elgueta will assist the Sub-Committee to the fullest extent possible.

2. It is anticipated that the Sub-Committee will take only a general over-view of the region, its needs and ascertained gaps in research. The chief purpose of the Sub-Committee is to give guidance to TAC on the terms of reference for charging one or more small technical committees with the preparation of detailed recommendations on the most effective means for coordinating and conducting research on regional priority problems. It is anticipated that the Sub-Committee will have at its disposal the report of the IDB on Agricultural Research in Latin America as well as other documents to be provided by the Secretariat.

3. The Sub-Committee will report to TAC on the following matters:

(i) A review of the ecology, environmental, vegetative and climatic characteristics of Tropical (Middle) America, including the Caribbean, that would permit the development of a definition of the region that would make a logical, homogeneous, geographic clustering useful for developing, conducting, diffusing and applying research results from a cooperative and coordinated programme of international, regional and national research institutions.

(ii) Once the region has been defined, the Sub-Committee is asked to provide an overall general analysis of the state of knowledge and the research presently focused on the problems of the major crop and livestock products used in the region as human food, giving particular attention to:

(a) the programmes of the international, regional and national research and training institutions working in or directly serving the region through outreach programmes;

(b) the regional need for improved protein supplies from grain legumes (especially dry beans) and beef cattle, the research required to underpin regional and national development actions to meet this need; and

(c) the preparation of an outline of a potential network of research stations that might be involved in an integrated cooperative pro-

gramme of crop and livestock research under the leadership of an international and/or a selected regional centre, including a suggested guideline for organizing and effecting the pattern of cooperative research, the outreach from the research centres and the dissemination of research findings.

(iii) The terms of reference and composition of specific technical task forces to give detailed consideration to what should be undertaken to gain organized effectiveness, greater strength and comprehensiveness, and proper coordination of agricultural research on priority problems of the region.

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January 1973

CORRIGENDUM TO DOCUMENT DDR: IAR/73/9

"Report to the Technical Advisory Committee
of the Sub-Committee appointed to review
Agricultural Research in Tropical America

(Summary of conclusions and recommendations)

(Item ~~7~~ 8)"

TAC SECRETARIAT

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

ROME 1973

The Chairman of the Sub-Committee presents the attached corrigendum to pages 6 and 7 of the Report to the Technical Advisory Committee of the Sub-Committee appointed to review Agricultural Research in Tropical America (Summary of conculsions and recommendations) Document No. DDR: IAR/73/9 in order to clarify the information given regarding the Turrialba Centre.

The paragraph headed "The Turrialba Centre" sub-paragraphs 1 - 5 should read as follows and former sub-paragraph 5 becomes 6 :-

The Turrialba Centre

1) The Sub-committee feels it is necessary to clarify the respective position of the Instituto Inter-americano de Ciencas Agrícolas (IICA) and its dependency the Centro Tropical de Enseñanza e Investigación, Turrialba (CTEI). IICA is the Institute of the Organization of American States (OAS) charged with specific responsibility for regional developments in the field of agriculture. Its total budget amounts to US $4,100 million annually.

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In 1951 IICA started its decentralization, setting up technical personnel in three Regional Offices, in order to give more efficient assistance to countries in the Continent. The Office for the North Zone includes Mexico, the Central American countries, Panama and the Antilles. At the beginning this Office had its headquarters in Cuba, and after changing a few times it has been in Guatemala. The Office for the Andean Zone, settled since its beginning in Lima, covers Venezuela, Colombia, Ecuador, Peru and Bolivia. The Office for the Southern Zone, located in Montevideo, covers Brazil, Paraguay, Uruguay, Argentina and Chile. Also during this period was established in San José de Costa Rica, the General Headquarters.

In 1964 was created the Inter-American Center for Agrarian Reform in Bogota, and from that time up to now, IICA has been distributing its budget among these main Offices:

General Headquarters	(San José, Costa Rica)
Regional Office	North Zone (Guatemala)
Regional Office	Andean Zone (Lima, Perú)
Regional Office	Southern Zone (Montevideo, Uruguay)
Tropical Center for Teaching and Research	(Turrialba, Costa Rica)
Inter-American Center for Rural Development and Agrarian Reform	(Bogotá, Colombia)

Recently IICA has also established National Offices in almost all countries, south of the Rio Grande.

Regional and National Offices spend almost all their efforts towards the strengthening of National Institutions and the establishment of regional cooperation programs. For 1972-73 the total budget of IICA was of US $4,779,000 and of this, the amount contributed for the Teaching and Research Center only, was of US $ 695,068, that is 14.5% of the total budget.

At present, the Turrialba Center has concentrated its activities in three departments: 1. Soils and Crops - giving special emphasis to leguminous with grains - having an important program for the improvement of cocoa, and a secondary one, for other crops, including the maintenance of a valuable coffee collection; 2. Animal Production, with emphasis in dairy herds for low, humid tropical areas; and 3. Forestry, with an important program in forest entomology and a selection of fast growing trees in humid tropical conditions.

2) Current Finances. The current budget of the Centre is US $955,318 annually, made up from the following contributions:

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Current expenditure shows the swing from concentration on training to concentration on research, the latter accounting for 56% of expenditure.

3) Physical facilities. These are impressive and superbly maintained, clearly at very high cost. More than half the land at Turrialba is under pasture and a considerable portion of the balance under forest and plant collections. The soils are atypical of the humid tropics and not well suited for the legumes which form the main lines of current crop research. Consequently much of the legume field work is carried out elsewhere in Costa Rica and in cooperative programmes (IICA) with other participating territories.

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4) Staffing. The standard of the professional staff was quite high but all are suffering from uncertainty regarding the future. They admit that the station is running at little if anything over 50% capacity and are putting high hopes on receiving international assistance, either for the Legumes/Livestock programmes or in some other role such as a component in the proposed Genetic Resources Centres Network.

5) Future Plans. The Sub-Committee was informed that at present the status of the following projects is as follows:

a) IICA decided to reduce step-wise its contribution from US $695,000.00 per year to US $300,000.00, during a period of 5 years. The discussions that are being held by IICA with the Costa Rican Government, as well as with other Central American Government, in order to change the structure of the Center, are well advanced towards an agreement between IICA and the Costa Rican Government. These negotiations will change the Center into a self-governing institution for the service of countries in Central America and the Antilles. Both parties will become participants of the Center, as well as other Institutions or countries willing to finance at least US $50,000.00 per year. The Center could also receive donations from other international organizations.

b) Discussions are also being carried out with the University of Costa Rica so as to reach an agreement by which the University would assure the responsibility of directing post-graduate courses, granting the corresponding degrees.

c) It has been planned for IICA to keep the library, document center and computation center, for the service of all countries in the American Continent. In any case, the Library will physically remain in Turrialba.

6) Conclusions and recommendations. (same as previously stated)